

ADDITIONS AND NOTEWORTHY VASCULAR PLANTS FROM ARKANSAS, WITH SOME ECOLOGICAL NOTES

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ABSTRACT

Six vascular plant taxa are reported as new to the Arkansas flora (*Cirsium muticum*, *Liparis loeselii*, *Pedicularis lanceolata*, *Rhynchospora capillacea*, *Solidago patula* var. *strictula*, *Solidago riddellii*) and two noteworthy collections (*Buchnera floridana*, *Scleria verticillata*) are presented with brief ecological notes.

This paper presents eight new or otherwise noteworthy records of vascular plants collected during 1984 field studies. These collections provide evidence that much remains to be learned about the Arkansas flora. Many counties have not been systematically searched by collectors and offer potential for significant discoveries. Nomenclature follows Kartesz & Kartesz (1980) except for *Buchnera floridana* and *Cypripedium kentuckiense*.

BUCHNERA FLORIDANA Gandog. (Scrophulariaceae). Ashley Co.: NW $\frac{1}{4}$ of section 1, T18S, R8W, Crossett North 7.5' Quad, Crossett Prairie, 2 Sep 1984, Orzell 1420 & L. Peacock (APCR, UARK, VDB). Abundant in a 10 acre remnant coastal plain prairie. Previously reported for Arkansas by Buchholz & Palmer (1926) and Demaree (1941, 1943) but considered unsubstantiated by Smith (1978). Similar to *Buchnera americana*, but distinguished by the obscurely 3-veined, lanceolate to oblanceolate leaves, shorter corolla tube (6–10 mm) and corolla lobes (2–5 mm) (Godfrey & Wooten 1981, Radford et al. 1968, Pennell 1935, Correll & Johnston 1970). Vouchers were verified by Dr. Robert Kral at Vanderbilt University.

CIRSIIUM MUTICUM Michx. (Asteraceae). Garland Co.: SW $\frac{1}{4}$, SW $\frac{1}{4}$, NW $\frac{1}{4}$ of section 16, T3S, R22W, Percy 7.5' Quad, along Meyers Creek, Ouachita National Forest, 5 Sep 1984, Orzell 1424 (UARK), 20 Sep 1984, Orzell 1427, G. Tucker & L. Peacock (MO). Rare, in a wooded acid seep on

saturated muck underlain by gravelly substrate, shaded by *Acer rubrum* L., *Carpinus caroliniana* Walt., and *Magnolia tripetala* L. Associates were *Cypripedium kentuckiense* C. F. Reed, *Juncus coriaceus* Mackenzie, *Liparis loeselii* (L.) L. C. Rich., *Onoclea sensibilis* L., *Pedicularis canadensis* L., *Rudbeckia fulgida* Ait. var. *umbrosa* (C. L. Boynt. & Beadle) Cronq., *Senecio aureus* L., *Smilax bona-nox* L., and *Thelypteris palustris* Schott.

Although *Cirsium muticum* is rather wide ranging (Cronquist 1980, Correll & Correll 1975, Godfrey & Wooten 1981) it is local and sporadic in the southern extension of its range, particularly in Louisiana, Texas, Oklahoma, Missouri and Tennessee. The Arkansas record is the first from the state and from the Ouachita Province (Fenneman 1938) for this northern plant. Nearest collections are isolated occurrences in east Texas, where it is very rare (Correll & Correll 1975), a single collection from southeastern Oklahoma (Taylor & Taylor 1978), scattered records in southeastern Missouri (Steyermark 1963, Orzell 1984), reported from Louisiana (R. Dale Thomas, pers. comm.), and recent collections by E. Bridges in the Western Highland Rim of west-central Tennessee. The infrequent occurrence of *C. muticum* in the southern extent of the range seems to be correlated to its fidelity to rather undisturbed seepage wetlands.

LIPARIS LOESELII (L.) L. C. Rich. (Orchidaceae). Garland Co.: SW $\frac{1}{4}$, SW $\frac{1}{4}$, NW $\frac{1}{4}$ of section 16, T3S, R22W, Percy 7.5' Quad, along Meyers Creek, Ouachita National Forest, 26 Jul 1984, Orzell 1391 (NYS, VDB), 20 Sep 1984, Orzell 1428, G. Tucker & L. Peacock (MO, UARK). Scattered in wooded acid seeps usually covered with the moss, *Thuidium delicatulum* (Hedw.) B.S.G. over a seepy gravel substrate. Associates include *Acer rubrum* L., *Athyrium filix-femina* (L.) Roth var. *asplenioides* (Michx.) Farw., *Carex bromoides* Willd., *Cirsium muticum* Michx., *Euonymus americanus* L., *Lindera benzoin* (L.) Blume, *Magnolia tripetala* L., *Platanthera clavellata* (Michx.) Luer, *Ranunculus recurvatus* Poir., and *Senecio aureus* L.

This is the first record of *Liparis loeselii* from Arkansas, disjunct approximately 200 miles from populations isolated in the Ozark Plateaus of southeastern Missouri (Orzell 1983, 1984). The Garland County station in the Ouachita Province of Arkansas represents a significantly disjunct population for this northeastern species, and is the southernmost known occurrence of *L. loeselii*. Specimens were verified by Dr. Charles Sheviak at the New York State Museum.

PEDICULARIS LANCEOLATA Michx. (Scrophulariaceae). Fulton Co.: NW $\frac{1}{4}$, SE $\frac{1}{4}$, NE $\frac{1}{4}$ of section 7, T20N, R8W, Salem 15' Quad, 13 July 1984, Orzell 1373 (APCR), 2 Oct 1984, Orzell 1437 (APCR, MO, UARK, VDB). Occasional on quaking sphagnum peat, saturated by cold minerotrophic seepage with *Carex lurida* Wahlenb., *Dichanthelium*

scoparium (Lam.) Gould, *Eupatorium perfoliatum* L., *Linum striatum* Walt., *Oxypolis rigidior* (L.) Raf., *Parnassia grandifolia* DC., *Rhynchospora capillata* (Michx.) Vahl, *Rudbeckia fulgida* Ait. var. *umbrosa* (C. L. Boynt. & Beadle) Cronq., and *Senecio aureus* L.

Pedicularis lanceolata is primarily a northeastern calcicole with isolated localities in the Ozark Plateaus of southeastern Missouri. The Fulton County collection is the first in Arkansas and a range extension into the state from adjacent southeastern Missouri.

RHYNCHOSPORA CAPILLACEA Torr. (Cyperaceae). Baxter Co.: Sections 13, 14, & 15, T18N, R12W, Norfolk Dam South 7.5' Quad, along streamside of Otter Creek, 10 Jul 1984, Orzell 1353 (APCR, MO, UARK, VDB). Seepage margins of streamside along calcareous seep-fed streams, with *Calamintha arkansana* (Nutt.) Shinnars, *Helenium* sp., *Lysimachia quadriflora* Sims, and *Rudbeckia fulgida* Ait. var. *umbrosa* (C. L. Boynt. & Beadle) Cronq., and on damp weathered dolomite bedrock with *Equisetum hyemale* L., *Juncus* spp. and *Vernonia* sp. The senior author also has observed *Rhynchospora capillacea* in Arkansas from streamside seep-fens on the Salem Plateau in Sharp, Stone, and Marion counties, and from a sedge-shrub fen in Marion County.

Rhynchospora capillacea is an obligate calcicole in the Ozark Plateaus of southeastern Missouri where it occurs in calcareous seep fens and on moist calcareous (dolomite) outcrops. The Arkansas collections represent the first in the state and extension of the known range southward from Missouri. Vouchers were verified by Dr. Robert Kral at Vanderbilt University.

SCLERIA VERTICILLATA Muhl. ex Willd. (Cyperaceae). Sharp Co.: Section 7, T18N, R4-5W, Sitka 7.5' Quad, along Rock Creek, Harold Alexander Wildlife Management Area, 23 Oct 1984, Orzell 1557 & E. Bridges (APCR, MO, UARK). Dolomite bedrock along streamside seep fens with other calcicoles, such as *Lysimachia quadriflora* Sims, *Parnassia grandifolia* DC., *Pycnanthemum virginianum* (L.) Durand & Jackson, *Rhynchospora capillacea* Torr., and *Solidago riddellii* Frank.

In the midwest, where its distribution is local and sporadic, *Scleria verticillata* requires a constant supply of cold, calcareous, minerotrophic water and a mildly disturbed substrate (Smith 1983). Both ecological requirements are met along Rock Creek, which is permanently fed by cold springs moderating the microclimate, and where scouring flash floods produce a suitable disturbed substrate.

Nearest records are from the Ozark Plateaus of southeastern Missouri (Steyermark 1963), where *Scleria verticillata* is a rare disjunct restricted to fens (Orzell 1984). There is a historical collection from northwestern Arkansas, Benton County, *Plank s.n.*, undated specimen at MO (Smith 1978, Fairey 1967).

Rediscovery of *Scleria verticillata* in Arkansas from a calcareous seep-fed stream is further evidence that such streams provide a refugium for disjunct taxa in the Ozark Plateaus.

SOLIDAGO PATULA Muhl. var. *STRICTULA* Torr. & Gray (Asteraceae). Union Co.: Corner of sections 17, 19, & 20, T16S, R14W, Calion 7.5' Quad, 2 Sep 1984, Orzell 1415, C. Amason & L. Peacock (APCR, UARK). Uncommon in artificially open acid seepage slope under powerline with *Alnus serrulata* (Ait.) Willd., *Aster umbellatus* P. Mill., scattered *Myrica cerifera* L., *Panicum* sp., and *Xyris torta* Sm.

Solidago patula var. *strictula* is reported as occurring mostly on the coastal plain from Virginia to Florida and west to Texas (Cronquist 1980, Wilhelm 1984). Although widely distributed, the variety is considered infrequent in the Carolinas (Radford et al. 1968), and Louisiana (R. Dale Thomas, pers. comm.). It is rather frequent in southeastern Texas but has only been collected twice in southeastern Oklahoma (*Solidago salicina* Ell. in Taylor & Taylor 1978, 1984). The Union County collection is the first from Arkansas and a range extension from adjacent northern Louisiana parishes.

SOLIDAGO RIDDELLII Frank (Asteraceae). Sharp Co.: Section 7, T18N, R4-5W, Sitka 7.5' Quad, along Rock Creek, Harold Alexander Wildlife Management Area, 23 Oct 1984, Orzell 1555 & E. Bridges (APCR, MO, UARK, VDB). Abundant along a narrow streamside of Rock Creek, a calcareous spring-fed stream, and in calcareous seep fens surrounding springs. Associates include *Lysimachia quadriflora* Sims, *Parnassia grandifolia* DC., *Pycnanthemum virginianum* (L.) Durand & Jackson, *Rhynchospora capillacea* Torr., and *Scleria verticillata* Muhl. ex Willd.

Solidago riddellii is a rare disjunct, restricted to fens in the Ozark Plateaus of southeastern Missouri (Orzell 1984). Populations of *S. riddellii* in southeastern Missouri and the Sharp County location in northeastern Arkansas are several hundred miles disjunct from the main range in the north-central states from Ohio to Minnesota. The Arkansas station is the southernmost record.

SUMMARY

Buchnera floridana, although previously reported from Arkansas, had not been generally recognized as occurring in the state and is here documented from the Arkansas coastal plain. Three Arkansas state records (*Pedicularis lanceolata*, *Rhynchospora capillacea*, *Solidago riddellii*) with fidelity to fens are generally northern in distribution. All have a disjunct population center in the Ozark Plateaus of southeastern Missouri which is now known to extend into adjacent northeastern Arkansas. *Liparis loeselii*, with a northeastern

distribution, represents a significant disjunct new to Arkansas and to the Ouachita Province, by far the southernmost locality for this orchid. Three additional Arkansas state record plants (*Cirsium muticum*, *Scleria verticillata*, *Solidago patula* var. *strictula*) although wide ranging are restricted to seepage wetlands with local and sporadic distribution particularly in Arkansas and several surrounding states.

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